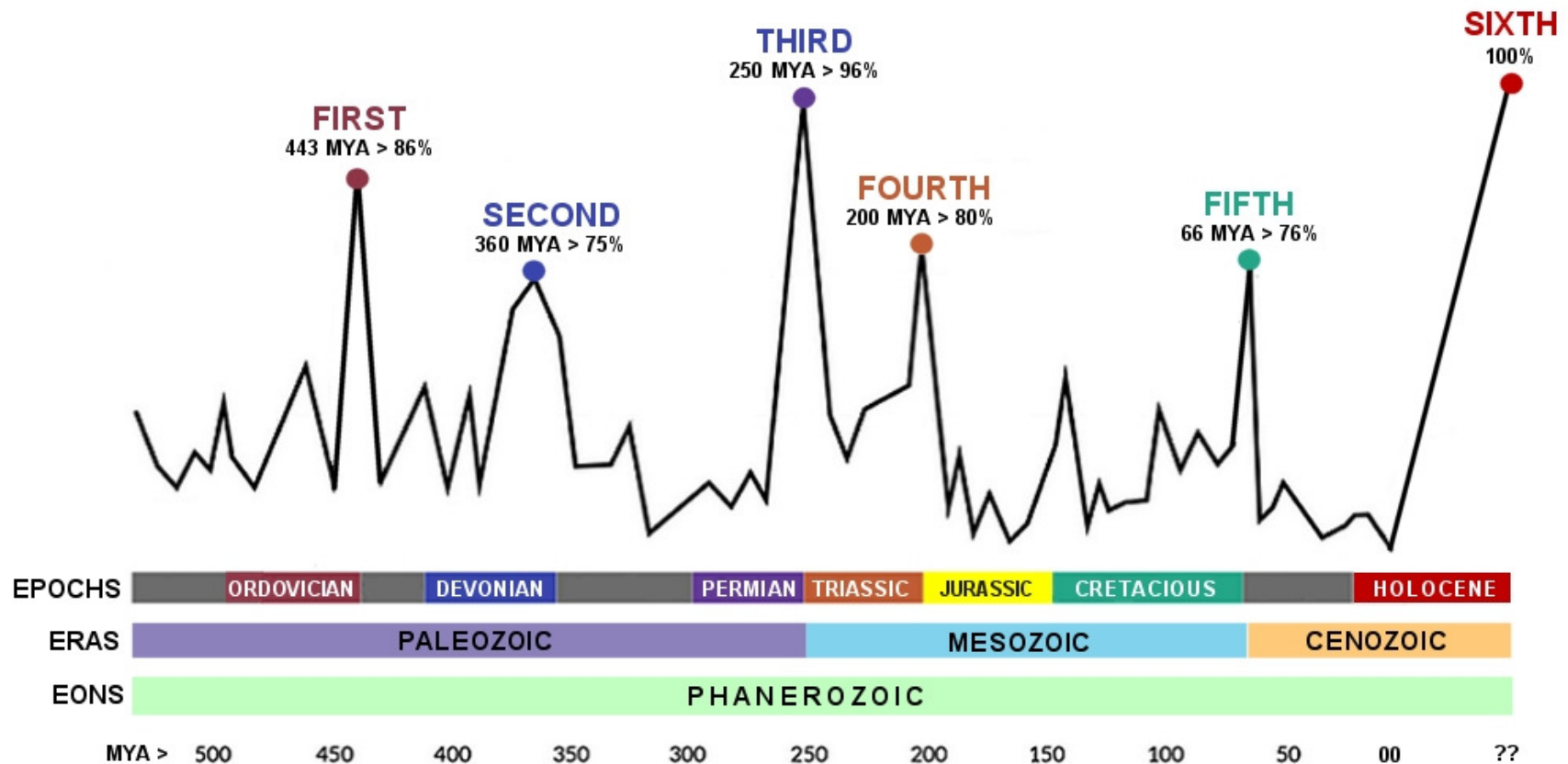


THE SIXTH EXTINCTION

The five extinctions in the past were caused by asteroid strikes, volcanic eruptions and climate shifts. The sixth extinction will be caused by us.

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Geologists have discovered **five** mass extinctions during the last 500 million years. Mass extinctions cause a large percentage, typically 75%, of all known extant species of plants and animals to disappear from the fossil evidence.



The First Mass Extinction

443 million years ago, a severe ice age caused sea levels to drop 100 meters, killing 86% of all species, predominantly ocean dwellers which died from the shortage of oxygen in the oceans.

The Second Mass Extinction

360 million years ago, earth suffered a prolonged climate change, killing about 75% of species, including almost all corals and life in shallow seas.

The Third Mass Extinction

250 million years ago, large-scale volcanic eruptions in Siberia caused a savage period of global warming which killed more than 96% of all species, including trilobites and giant insects.

The Fourth Mass Extinction

200 million years ago, another large-scale volcanic eruption caused 80% of the species to go extinct, leaving Earth clear for dinosaurs to evolve and thrive for 134 million years.

The Fifth Mass Extinction

66 million years ago, 76% of the species and all dinosaurs were killed when an asteroid struck the Yucatan peninsula of the Gulf of Mexico, leaving mammals and eventually humans to thrive.

The Sixth Mass Extinction

We are living in the **Holocene** epoch. It began 11,700 years ago and includes all of recorded history. It's also called the **Anthropocene** epoch, the Age of Man, because unlike previous mass extinctions, which were caused by natural phenomena, the next mass extinction is likely to be caused by our greedy, selfish exploitation of Earth's resources. In the Anthropocene epoch, the rate of extinction is thousands of times greater than the natural rate of extinction, and that makes some scientists estimate that 20% of all plant and animal species on Earth will be extinct within the next 25 years. Others claim that totalitarian governments, tribalism, population growth, pollution, deforestation for agricultural purposes (which threatens the species that inhabit those places by significantly altering their habitats), overfishing of the rivers, lakes and seas, ocean acidification, destruction of our wetlands, nuclear, biological and chemical warfare—the list can be boiled down to the following 12 events that could lead to the end of the world and to planet Earth's survival.



Climate Change... has collapsed civilizations in the past. Now, melting glaciers, globally higher temperatures and rising ocean levels could lead to another cycle of mass deaths and famines, social collapse and mass migration today. Shocks to the agriculture and biosphere-dependent industries of the more developed countries could lead to global conflict and collapse.



Nuclear War... the Cold War is behind us, but an exchange of nuclear weapons is still a possibility. War between Russia and Ukraine and Israel and the Arabs are examples of how close we might be to World War Three. Millions would die immediately, then millions more during the nuclear winter due to a dwindling food supply and violence over competition for food, water, shelter and territory.



Ecological Catastrophes... could result in mass extinction if the planet can no longer support plants, animals and humans. We are the stewards of planet Earth, so it is our responsibility to develop political and technical solutions to protect the ecosystem on a large scale. Wake up everyone! This blue-green planet wandering among the stars is the only home we have!



Systemic Collapse... failure of the global network of dependent economies, infrastructure, trade and politics could lead to economic collapse, social chaos, civil unrest and a global breakdown of law and order. The depreciation of the US dollar, for example, would be globally devastating the loss of just one nation's electrical power can be.



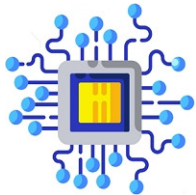
Global Pandemic... the modern world has better sanitation and medical solutions to diseases than it did in the past. But dense populations can spread infections globally, and if a pathogen evolved that combined the contagious and fatal characteristics of the Bubonic Plague, Cholera, Ebola, Influenza, Rabies, Smallpox, Malaria, Yellow Fever and Tuberculosis, the global death toll would be extreme.



Synthetic Biology... can have positive outcomes if it is used to develop drugs, medicines and vaccines. But synthetic biology could have negative results if a dangerous pathogen escapes a research laboratory or is engineered to target humans with a dangerous pathogen for biological warfare.



Artificial Intelligence... with the ability to achieve a programmed goal could be constructive tools for dealing with the other risks to civilization. But machines might be difficult to control if the programming disregards humanity and instead constructs a world without humans. And AI enabled warfare might create new risks—the HAL computer in the “2001” movie, for example.



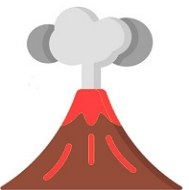
Nano Technology... atomically precise manufacturing is able to create resilient materials, smart equipment and intelligent machines. It might even create solutions to the depletion of natural resources, pollution, climate change, clean water and global poverty. If it's used to construct weapons or self-replicating nanomachines, will we be able to control the tools and weapons it creates?.



Bad Governance... we need international cooperation to deter us from our greedy, selfish exploitation of Earth's resources. Is our capitalistic efforts to conquer nature and exploit plants and animals for our own purposes leading to planetary disaster and the extinction of civilization?



Asteroid Impact... could be a mass extinction event—not from the impact, but from the dust, ash and debris projected into the upper atmosphere of our planet. The resulting impact winter would affect the climate, damage the biosphere, diminish food supplies, and create political instability. Scientists are investigating ways to deflect asteroids on a collision course with Earth.



Super Volcanoes... could produce enormous amounts of dust, debris and ash into the upper atmosphere. That would block the Sun, causing a volcanic winter. The Mt Pinatubo eruption, which occurred in 1991, cooled the Earth over one centigrade degree for 3 years. The Toba eruption, which occurred 70,000 years ago, cooled the Earth more than 5 centigrade degrees for two centuries.



Unknown Risks... would we survive a hostile attack by aliens whose technology has advanced far beyond ours? The Fermi Paradox says the reason we can't find intelligent life is that it tends to destroy itself before it has the technology to reach the stars. If that is true, we might not have to face a hostile invasion from planet X because self-destruction is an imminent risk we face today.